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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/678,750
Filing Date: October 03, 2003
Appellant(s): PARK ET AL.

Kari P. Footland
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed August 31, 2009 appealing from the Office action mailed November 26, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

Claims 1, 3, 4, 6, 7 and 9-23 are rejected.

Claims 2, 5 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The 35 U.S.C. 103(a) rejections of claims 2, 5 and 8 have been withdrawn.

Claims 2, 5 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

- US 4,787,076 Deguchi et al. 11-1988
- Applicant's Admitted Prior Art (Official Notice not properly challenged)
- High and Low Pass Filters, http://www.mtholyoke.edu/courses/pdobosh/i102_2006/high%20and%20low%20pass%20filters.html, 11/23/08

- Low-pass Filter, Wikipedia, http://en.wikipedia.org/wiki/Low-pass_filter, 11/23/08
- High-pass Filter, Wikipedia, http://en.wikipedia.org/wiki/High-pass_filter, 11/23/08
- Joe Wolfe, School of Physics, The University of New South Wales, RC Filters, Integrators and Differentiators, http://www.physclips.unsw.edu.au/jw/RCfilters.html, 11/23/08

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 3, 4, 6, 7, 9-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deguchi et al. (US Patent Number 4,787,076) in view of Applicants Admitted Prior Art (AAPA).

Regarding claim 1, Deguchi discloses a tracking error signal generating apparatus comprising: a main beam push pull (MPP) signal generating unit which generates an MPP signal according to electrical signals output by main photodetecting units based on a calculated deviation of beam powers detected by the main photodetecting units arranged on right and left sides of a specific track, respectively (*main beam tracking error signal,* Col. 4, Lines 19-25; Col. 5, Lines 24-25; see Figures 2 and 6-7); a side beam push pull (SPP) signal generating unit which generates an SPP signal according to electrical signals output by photodetecting units based on a calculated deviation of beam powers detected by the photodetecting units, the photodetecting units being one of pairs of the main photodetecting units diagonally arranged with respect to the track and side photodetecting units disposed on opposing sides of the track and outside of the main photodetecting units (*tracking error signals resulting from auxiliary beams,* Col. 4, Lines 28-32; see photodetector arrangement in Fig 6-7); and a subtractor which generates a tracking error signal by calculating a difference between the MPP signal and the filtered SPP signal (*performing addition or subtraction of the* TE_1 *(auxiliary beams tracking error) and* TE_0 *(main beam tracking error signal) signals based on phase difference,* Col. 6, Lines 48-58).

While Deguchi does not specifically disclose a high-pass filter which removes an AC component from the SPP signal such that only DC components of the SPP signal remain wherein the high-pass filter is connected in series between an output terminal of the side beam push pull signal generating unit and a ground terminal, Deguchi does however disclose a low-pass filter which removes AC components from the SPP signal (Col. 4, Lines 49-51).

AAPA includes the fact that providing a low-pass filter in series with a signal output results in the equivalent frequency response as connecting a high-pass filter to ground at the signal output (i.e. removing AC components from a signal and allowing DC components to pass).

It would have been an obvious matter of design choice to provide a high-pass filter to ground versus having a low-pass filter in series with the SPP signal since the applicant has not disclosed that a high-pass filter solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a low-pass filter in series.

Regarding claim 3, Deguchi discloses the apparatus of claim 1, wherein the MPP signal generating unit generates an MPP signal by performing an operation on electrical signals a, b, c, and d which satisfies an equation MPP=(a+d)-(b+c) and the SPP signal generating unit generates an SPP signal by performing an operation on electrical signals e and f which satisfies an equation SPP=(e-f), wherein the main photodetecting units comprise main photodetecting units PD_A, PD_B, PD_C, and PD_D which respectively output the electrical signals a, b, c, and d, wherein the main photodetecting units PD_A, PD_B, PD_C, and PD_D are positioned at four quadrants in a clockwise direction, wherein the main photodetecting units PD_A and PD_D are symmetrically arranged with the main photodetecting units PD_B and PD_C with respect to the track, wherein the side photodetectors comprise side photodetecting units PD_E and PD_F which respectively output electrical signals e and f, and wherein the side photodetecting units PD_E and PD_F are symmetrically arranged at opposing sides of the track and outside of the main photodetecting units PD_A, PD_B, PD_C, and PD_D (Col. 4, Lines 18-33; see Figs. 2 and 6).

Regarding claim 4, Deguchi discloses a method of generating a tracking error signal comprising: wherein the MPP signal is obtained by calculating a deviation of beam powers detected by main photodetecting units which are arranged in right and left directions with respect to a track and the SPP signal is obtained by calculating a deviation of beam powers detected by photodetecting units which are one of pairs of the main photodetectors diagonally arranged with respect to the track and side photodetecting units disposed on opposing sides of the track and outside of the main photodetecting units (Col. 4, Lines 18-33; see Figs. 2 and 6); and calculating a difference between an MPP signal and an SPP signal whose AC components are removed (low-pass filter, Col. 4, Lines 49-51).

While Deguchi does not specifically disclose a high-pass filter which removes AC components from the SPP signal such that only DC components of the SPP signal remain wherein the high-pass filter is connected in series between an output terminal of a generator of the SPP signal and a ground terminal, Deguchi does however disclose a low-pass filter which removes AC components from the SPP signal (Col. 4, Lines 49-51). AAPA includes the fact that providing a low-pass filter in series with a signal output results in the equivalent frequency response as connecting a high-pass filter to ground at the signal output (i.e. removing AC components from a signal and allowing DC components to pass).

It would have been an obvious matter of design choice to provide a high-pass filter to ground versus having a low-pass filter in series with the SPP signal since the applicant has not disclosed that a high-pass filter solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a low-pass filter in series.

Regarding claim 6, this claim contains limitations similar to those in claim 3 and is rejected for the same reasons of obviousness used above.

Regarding claim 7, Deguchi discloses an optical recording/reproducing system, comprising: a pickup which emits a laser beam toward an optical medium and detects a reflected laser beam reflected from a disc (Col. 3 Lines 15-68); a tracking error signal generating unit that generates a tracking error signal by calculating a difference between an MPP signal obtained by calculating a deviation of beam powers detected by main photodetecting units which are arranged in right and left directions with respect to a track and an SPP signal obtained by calculating a deviation of beam powers detected by photodetecting units which are one of main photodetecting units diagonally arranged with respect to the track and signals output by side photodetecting units disposed on opposing sides of the main photodetectors (*main beam tracking error signal,* Col. 4, Lines 19-25; Col. 5, Lines 24-25; *tracking error signals resulting from auxiliary beams,* Col. 4, Lines 28-32; *performing addition or subtraction of the* TE_1 *(auxiliary beams tracking error) and* TE_0 *(main beam tracking error signal) signals based on phase difference,* Col. 6, Lines 48-58; and Figures 2, 6, and 7); a servo controller which generates a tracking driving signal which is used to move an optical system of the pickup in a radial direction so as to direct the laser beam at a center of the track, using the tracking error signal (Col. 5, Lines 64-68); and a tracking servo driving unit which drives a tracking actuator included in the pickup in response to the tracking driving signal (Col. 4, Lines 38-44).

While Deguchi does not specifically disclose a high-pass filter which removes AC components from the SPP signal such that only DC components of the SPP signal remain wherein the high-pass filter is connected in series between an output terminal of a generator of the SPP signal and a ground terminal, Deguchi does however disclose a low-pass filter which removes AC components from the SPP signal (Col. 4, Lines 49-51).

AAPA includes the fact that providing a low-pass filter in series with a signal output results in the equivalent frequency response as connecting a high-pass filter to ground at the signal output (i.e. removing AC components from a signal and allowing DC components to pass).

It would have been an obvious matter of design choice to provide a high-pass filter to ground versus having a low-pass filter in series with the SPP signal since the applicant has not disclosed that a high-pass filter solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a low-pass filter in series.

Regarding claim 9, this claim contains limitations similar to those in claim 3 and is rejected for the same reasons of obviousness used above.

Claim 10 is drawn to the computer readable medium corresponding to the method of using same as claimed in claim 4. Therefore computer readable medium claim 10 corresponds to method claim 4, and is rejected for the same reason of obviousness as used above.

Regarding claim 11, Deguchi discloses a tracking error signal generator comprising: a main push pull (MPP) signal generator which generates an MPP signal based on a difference between a first sum signal representing the sum of signals output from main photodetecting portions disposed on a side of a track and a second sum signal representing the sum of signals output by the main photodetecting portions disposed on an opposing side of the track (*main beam tracking error signal,* Col. 4, Lines 19-25; Col. 5, Lines 24-25; see Figures 2 and 6-7); a side push pull (SPP) signal generator which generates an SPP signal based on a difference between one of a third sum signal representing the sum of signals output from the main photodetecting portions which are diagonally disposed with respect to the track in a first direction and a fourth sum signal representing the sum of signals output by the main photodetecting portions diagonally disposed with respect to the track in a second direction normal to the first and a fifth signal output by a first side photodetector and a sixth signal output by a second side photodetector (*tracking error signals resulting from auxiliary beams,* Col. 4, Lines 28-32; see photodetector arrangement in Fig 6-7); and a subtractor which generates a tracking error signal based on a difference between the MPP signal and a filtered SPP signal (*performing addition or subtraction of the* TE_1 *(auxiliary beams tracking error) and* TE_0 *(main beam tracking error signal) signals based on phase difference,* Col. 6, Lines 48-58).

While Deguchi does not specifically disclose a high-pass filter which removes AC components from the SPP signal such that only DC components of the SPP signal remain wherein the high-pass filter is connected in series between an output terminal of the side push pull signal generator and a ground terminal, Deguchi does however disclose a low-pass filter which removes AC components from the SPP signal (Col. 4, Lines 49-51).

AAPA includes the fact that providing a low-pass filter in series with a signal output results in the equivalent frequency response as connecting a high-pass filter to ground at the signal output (i.e. removing AC components from a signal and allowing DC components to pass).

It would have been an obvious matter of design choice to provide a high-pass filter to ground versus having a low-pass filter in series with the SPP signal since the applicant has not disclosed that a high-pass filter solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a low-pass filter in series.

Regarding claim 12, Deguchi discloses the tracking error signal generator of claim 11, wherein the main photodetecting portions are positioned at four quadrants of a photodetector in a clockwise direction and the main photodetecting portions on the first side of the track are symmetrically arranged with the main photodetecting portions on the opposing side of the track (see the photodetector arrangement in Figures 2 and 6).

Regarding claim 13, Deguchi discloses the tracking error signal generator of claim 11, wherein the side photodetectors are disposed at opposing sides of the track and outside of the main photodetectors (see the photodetector arrangement in Figures 2 and 6).

Regarding claim 14, Deguchi discloses a method of generating a tracking error signal, comprising: generating a main push pull (MPP) signal based on a difference between a first sum signal representing the sum of signals output from main photodetecting portions disposed on a side of a track and a second sum signal representing the sum of signals output by the main photodetecting portions disposed on an opposing side of the track (*main beam tracking error signal,* Col. 4, Lines 19-25; Col. 5, Lines 24-25; see Figures 2 and 6-7); generating a side push pull (SPP) signal based on a difference between one of a third sum signal representing the sum of signals output from the main photodetecting portions which are diagonally disposed with respect to the track in a first direction and a fourth sum signal representing the sum of signals output by the main photodetecting portions diagonally disposed with respect to the track in a second direction normal to the first and a firth sum signal output by a first side photodetector and a sixth sum signal output by a second side photodetector (*tracking error signals resulting from auxiliary beams,* Col. 4, Lines 28-32; see photodetector arrangement in Fig 6-7); and generating a tracking error signal based on a difference between the MPP signal and a filtered SPP signal (*performing addition or subtraction of the* TE_1 *(auxiliary beams tracking error) and* TE_0 *(main beam tracking error signal) signals based on phase difference,* Col. 6, Lines 48-58).

While Deguchi does not specifically disclose a high-pass filter which removes AC components from the SPP signal such that only DC components of the SPP signal remain wherein the high-pass filter is connected in series between an output terminal of a generator of the SPP signal and a ground terminal, Deguchi does however disclose a low-pass filter which removes AC components from the SPP signal (Col. 4, Lines 49-51).

AAPA includes the fact that providing a low-pass filter in series with a signal output results in the equivalent frequency response as connecting a high-pass filter to ground at the signal output (i.e. removing AC components from a signal and allowing DC components to pass).

It would have been an obvious matter of design choice to provide a high-pass filter to ground versus having a low-pass filter in series with the SPP signal since the applicant has not disclosed that a high-pass filter solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a low-pass filter in series.

Regarding claims 15 and 16, these claims contain limitation similar to those in claims 12 and 13 respectively, and are rejected for the same reasons of obviousness used above.

Claims 17, 18, and 19 are drawn to the computer readable medium corresponding to the method of using same as claimed in claims 14, 15, and 16 respectively. Therefore computer readable medium claims 17, 18, and 19 correspond to method claims 14, 15 and 16, and are rejected for the same reason of obviousness as used above.

Regarding claim 20, Deguchi discloses an optical recording/reproducing system, comprising: a pickup having a light beam generator which generates a light beam, an optical system which focuses the light beam onto an optical medium, a focus/tracking actuator which moves the optical system in a radial direction with respect to the optical medium in response to a tracking driving signal so as to direct the light beam at a specific track on the optical medium, and a photodetector section including main photodetecting portions which receive the light beam after the light beam is reflected from the optical medium and output respective signals in response thereto (Col. 3 Lines 15-68; Col. 4, Lines 34-44); a tracking error signal generator which generates a tracking error signal representing a difference between a main push pull (MPP) signal and a side push pull (SPP) generator (*performing addition or subtraction of the* TE_1 *(auxiliary beams tracking error) and* TE_0 *(main beam tracking error signal) signals based on phase difference,* Col. 6, Lines 48-58; and Figures 2, 6, and 7); a servo controller which generates the tracking driving signal based on the tracking error signal (Col. 4, Lines 38-44), wherein the MPP signal is generated based on a difference between a first sum signal representing the sum of signals output from the main photodetecting portions disposed on a side of a track and a second sum signal representing the sum of signals output by the main photodetecting portions disposed on an opposing side of the track (*main beam tracking error signal,* Col. 4, Lines 19-25; Col. 5, Lines 24-25; *tracking error signals resulting from auxiliary beams,* Col. 4, Lines 28-32; *performing addition or subtraction of the* TE_1 *(auxiliary beams tracking error) and* TE_0 *(main beam tracking error signal) signals based on phase difference,* Col. 6, Lines 48-58; and Figures 2, 6, and 7), and wherein the SPP signal is generated based on a difference between one of a third sum signal representing the sum of signals output from the main photodetecting portions which are diagonally disposed with respect to the track in a first direction and a fourth sum signal representing the sum of signals output by the main photodetecting portions diagonally disposed with respect to the track in a second direction normal to the first and a fifth signal output by a first side photodetector and a sixth signal output by a second side photodetector (*tracking error signals resulting* *from auxiliary beams,* Col. 4, Lines 28-32; see photodetector arrangement in Fig 6-7; ; *performing addition or subtraction of the* TE_1 *(auxiliary beams tracking error) and* TE_0 *(main beam tracking error signal*).

While Deguchi does not specifically disclose a high-pass filter which removes AC components from the SPP signal such that only DC components of the SPP signal remain wherein the high-pass filter is connected in series between an output terminal of a generator of the SPP signal and a ground terminal, Deguchi does however disclose a low-pass filter which removes AC components from the SPP signal (Col. 4, Lines 49-51).

AAPA includes the fact that providing a low-pass filter in series with a signal output results in the equivalent frequency response as connecting a high-pass filter to ground at the signal output i.e. removing AC components from a signal and allowing DC components to pass (this is also recognized by applicant as mentioned in the specification, page 11, lines 5-6, of the present application).

It would have been an obvious to one of ordinary skill in the art to substitute or replace the low-pass filter of Deguchi with the high-pass filter to ground versus having functional equivalent as that of the low-pass filter in series with the SPP signal in order to obtain another alternative embodiment since the applicant has not disclosed that the high-pass filter solves any stated problem or is for any particular purpose.

Regarding claims 21 and 22, these claims contain limitation similar to those in claims 12 and 13 respectively, and are rejected for the same reasons of obviousness used above.

Regarding claim 23, Deguchi discloses a filter in a tracking error signal generating circuit which generates a tracking error signal using a differential push pull method, comprising: wherein the SPP signal is obtained by using electrical signals output by photodetecting units based on a calculated deviation of beam powers detected by the photodetecting units, the photodetecting units being one of pairs of the main photodetecting units diagonally arranged with respect to the track and side photodetecting units disposed on opposing sides of the track and outside of the main photodetecting units (*tracking error signals resulting from auxiliary beams,* Col. 4, Lines 28-32; see photodetector arrangement in Fig 6-7), and wherein the tracking error signal can be stably generated regardless of a disc track pitch (Col. 2, Lines 25-34).

While Deguchi does not specifically disclose a high-pass filter which removes AC components from the SPP signal such that only DC components of the SPP signal remain wherein the high-pass filter is connected in series between an output terminal of a generator of the SPP signal and a ground terminal, Deguchi does however disclose a low-pass filter which removes AC components from the SPP signal (Col. 4, Lines 49-51).

AAPA includes the fact that providing a low-pass filter in series with a signal output results in the equivalent frequency response as connecting a high-pass filter to ground at the signal output i.e. removing AC components from a signal and allowing DC components to pass (this is also recognized by applicant as mentioned in the specification, page 11, lines 5-6, of the present application).

It would have been an obvious to one of ordinary skill in the art to substitute or replace the low-pass filter of Deguchi with the high-pass filter to ground versus having functional equivalent as that of the low-pass filter in series with the SPP signal in order to obtain another alternative embodiment since the applicant has not disclosed that the high-pass filter solves any stated problem or is for any particular purpose.

(10) Response to Argument

Appellant's arguments, beginning on Page 17 of 14 of the Appeal Brief filed August 31, 2009 have been fully considered but they are not persuasive.

In the Office Actions mailed on June 12, 2007, November 13, 2007, and May 2, 2008 Examiner took Official Notice that "providing a low-pass filter in series with a signal output results in the equivalent frequency response as connecting a high-pass filter to ground at the signal output (i.e. removing AC components from a signal and allowing DC components to pass)."

Appellants claim to have "implicitly traversed" the Official Notice taken by the Examiner, claims to have requested support for such an assertion , and further claims to have repeatedly asserted that "a low-pass filter does not result in the equivalent frequency response of a high-pass filter" and "providing a low-pass filter in series with a signal output does not result in AC components being removed from a signal such that only DC components can pass."

Examiner, however, maintains that the Appellant failed to make a timely traversal, either implicit or explicit, of the actual Official Notice. Instead, throughout the prosecution, Appellant has continually misquoted and improperly characterized the Official Notice by stating that the Examiner took Official Notice of "a high-pass filter which removes AC components from the SPP signal."

On page 15 of Appeal Brief, Appellant alleges to have presented arguments in the response filed on August 28, 2007 that “a high-pass filter which removes all AC components from the SPP signal such that only DC components of the SPP signal remain does provide a benefit **distinct from that of a low-pass filter in series with a signal output**” in response to the Examiner's assertion that a high-pass filter does not solve any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a low-pass filter in series. The Appellant also alleges to have “clarified why **a high-pass filter to ground does not result in the equivalent frequency response as a low-pass filter in series with a signal output**” - because the high pass filter removes all AC components from the SPP signal such that only DC components of the SPP remain, then a DPP signal can be stably generated regardless of disc track pitch. Appellant alleges that these arguments constitute an adequate traversal of the Official Notice however, the arguments above were not presented in the response filed on August 28, 2007.

To adequately traverse the Official Notice Appellant must specifically point out the supposed errors in the Examiners Action which would include stating why the noticed fact is not considered to be common knowledge or well known in the art. However, Appellants arguments filed on August 28, 2007, in its entirety state “a potential benefit of removing all AC components from the SPP signal such that only DC components of the SPP signal remain is that a DPP signal can be stably generated regardless of disc track pitch, as stated, for example, in paragraph [0045] of the present application." Nowhere in Appellants arguments filed on August 28, 2007 is a low-pass filter, high-pass filter, or the equivalences/differences in the frequency responses of a low-pass filter in series versus a high-pass filter to ground ever discussed.

Merely stating a potential benefit of "removing all AC components from the SPP signal such that only DC components of the SPP signal remain" is neither an implicit nor explicit traversal of the Official Notice taken by the Examiner but appears to address the conclusion of obviousness in the 35 U.S.C. 103(a) rejection of the claims. As such, in the subsequent Office Action dated November 13, 2007, Examiner properly indicated that Appellants failure to traverse the Official Notice resulted in the statement being taken to be admitted prior art. Examiner then provided a rationale and motivation for why it would have been an obvious matter of design choice to use a high-pass filter to ground versus a low-pass filter in series with the SPP signal. The motivation being since the Appellant has not disclosed that a high-pass filter solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a low-pass filter in series.

Appellant further argues that a low-pass filter and a high pass filter provide for different frequency responses, particularly as to what frequency components are able to pass through the filter (i.e. a low-pass filter only filters low frequency components and a high-pass filter filters high frequency components). First, the different frequency responses of high and low pas filters, per se, is not the point of the Admitted prior art (previously taken Official Notice of the examiner), rather that "a low-pass filter **in series with a signal output** results in the equivalent frequency response as **connecting** a high-pass filter **to ground at the signal output** i.e. removing AC components from a signal and allowing DC components to pass" (emphasis added). Second, Examiner is fully aware of the operation of both high-pass and low-pass filters and the frequency responses of each. That is, a high-pass filter is a filter that allows high frequency signals to pass but attenuates signals with frequencies lower than the cutoff frequency while a low-pass filter is a filter that allows low frequency signals (including the DC component) to pass but attenuates signals with frequencies higher than the cutoff frequency. Several references have previously been provided demonstrating well established basic design and known frequency response characteristics of both high-pass and low-pass filters. Note in particular that in their most basic form, a high pass filter is essentially a capacitor in the effected signal path and a low pass filter includes a capacitor to ground, i.e., a high pass filter to ground. Realization of either a high-pass or low-pass filter is not ideal. That is an ideal high-pass filter would completely eliminate all frequencies below the cutoff frequency while an ideal low-pass filter would completely eliminate all frequencies above the cutoff frequency.

Appellant claims “a high-pass filter which removes an AC component from the SPP signal such that only DC components of the SPP signal remain wherein the high-pass filter is connected in series between an output terminal of the side beam push pull signal generating unit and a ground terminal." Since the realization of filters is not ideal, the interpretation of one of ordinary skill in the art would be that the high-pass filter, connected in series between the output terminal of the side beam push pull signal generating unit and a ground terminal, removes an AC component (beginning at the cutoff frequency) from the SPP signal such that DC components (as well as the low frequency components up to the cutoff frequency) of the SPP signal remain.

As previously stated, when a low-pass filter is connected in series with a signal output, as in Figure 7 of Deguchi, the frequency response will be equivalent to that of a high-pass filter connected between the signal and ground. As disclosed by Deguchi (column 6 lines 48-55) and admitted by Appellant on page 16 of the Appeal brief, Deguchi specifically discloses that the low-pass filter in series with the signal output only outputs low frequency components of the signal. Given the understanding of the operation of the low-pass filter, this would also include the DC component and would result in the equivalent frequency response as connecting a high-pass filter in series between an output terminal of the side beam push pull signal generating unit and a ground terminal.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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Examiner, Art Unit 2627

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Supervisory Patent Examiner, Art Unit 2627

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